

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/015244

A. CLASSIFICATION OF SUBJECT MATTER  
Int.Cl<sup>7</sup> F16D48/02

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl<sup>7</sup> F16D48/02, F16H61/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho 1922-1996 Toroku Jitsuyo Shinan Koho 1994-2004

Kokai Jitsuyo Shinan Koho 1971-2004 Jitsuyo Shinan Toroku Koho 1996-2004

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 2001-146928 A (Komatsu Ltd.), 29 May, 2001 (29.05.01), Full text; all drawings & US 6405844 B1 Full text; all drawings	1-6, 10-12
Y	JP 7-1993 A (Caterpillar Inc.), 06 January, 1995 (06.01.95), Column 6, lines 7 to 14; Fig. 3 & US 5380257 A Column 4, line 57 to column 5, line 4; Fig. 3 & EP 616918 A1	1-6, 10-12
Y	JP 4-50519 A (Isuzu Motors Ltd.), 19 February, 1992 (19.02.92), Page 3, lower left column, lines 6 to 8; Fig. 1 (Family: none)	2

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

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"P" document published prior to the international filing date but later than the priority date claimed

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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"&amp;" document member of the same patent family

Date of the actual completion of the international search  
14 December, 2004 (14.12.04)Date of mailing of the international search report  
28 December, 2004 (28.12.04)Name and mailing address of the ISA/  
Japanese Patent Office

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## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 11-230334 A (Komatsu Ltd.), 27 August, 1999 (27.08.99), Full text; all drawings (Family: none)	1-12
A	JP 3-92623 A (Toyoda Automatic Loom Works, Ltd.), 17 April, 1991 (17.04.91), Full text; all drawings (Family: none)	1-12
A	JP 2002-254961 A (Robert Bosch GmbH.), 11 September, 2002 (11.09.02), Full text; all drawings & DE 10065725 A & FR 2818936 A	1-12